User Manual of 2S Li-Po Battery Deep Discharge Protector (For Remote Control Model Cars and Trucks)

1. Features

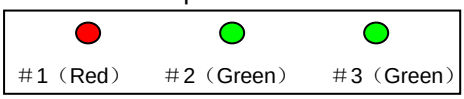
The protector concentrates three functions in one unit: Deep discharge supervision and protection; Battery voltage measurement; Abnormal throttle signal supervision and lose-control protection.

1.1. Deep discharge supervision and protection:

The protector provides reliable protection from the "deadly" deep discharge for your precious Li-Po battery cells. It can take not only the total voltage of whole battery pack but also the voltage of each cell, so it can prevent the weakest cell from being damaged earlier than the other cell in the same battery pack. When the voltage is lower than the threshold, the protector will stop the motor.

1.2. Voltage measurement:

There are 3 LEDs on the protector to indicate the voltage of your battery pack.



LEDs in Group A

- When the voltage is more than 7.8V, all of these 3 LEDs light;
- When the voltage is between 7.8V to 7.0V, #1 and #2 LEDs light;
- When the voltage is between 7.0V to the preset threshold, only #1 LED lights;
- When the voltage is lower than the preset threshold, none of these LEDs lights;

1.3. Abnormal throttle signal supervision and lose-control protection:

The protector will continuously monitor the throttle signal. When the throttle signal from receiver is normal, the protector will just transfer this signal to the speed controller (Pass this signal to the speed controller without any modification). If the throttle signal from receiver is abnormal, the protector will automatically lock the signal to the controller at a special level you preset (We call it "Protect Point", please read section 4.3 for detail information).

**** Remark: This function is only valid for AM, FM/PPM receiver, not valid for PCM receiver.***

2. Specifications

2.1. Size: 32mm * 18mm * 9mm (L * W * H)

2.2. Weight: 5g

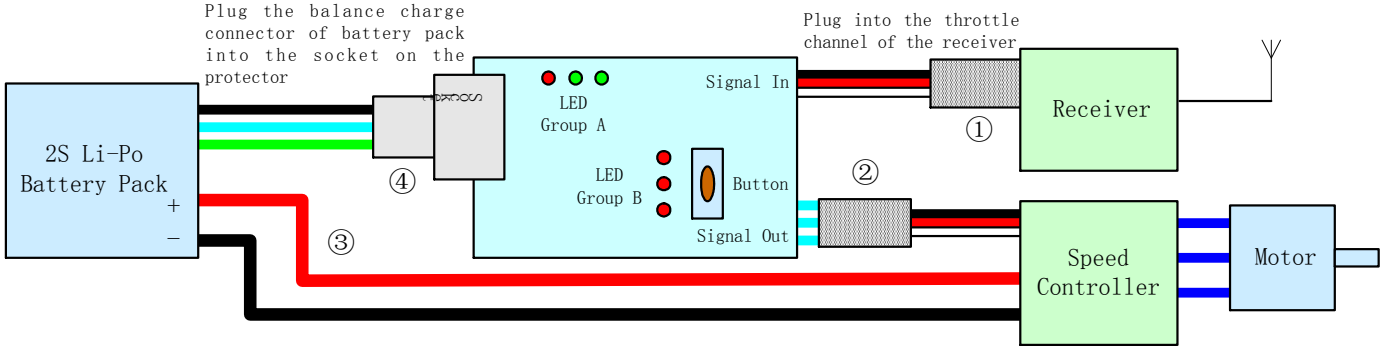
2.3. Battery type: 2S Li-Po

2.4. Threshold for deep discharge protection ： 2.6V/cell, 2.85V/cell or 3.1V/cell (Correspondingly, the total threshold for a 2S Li-Po battery pack is 5.2V, 5.7V or 6.2V)

2.5. Tolerance： 0.05V

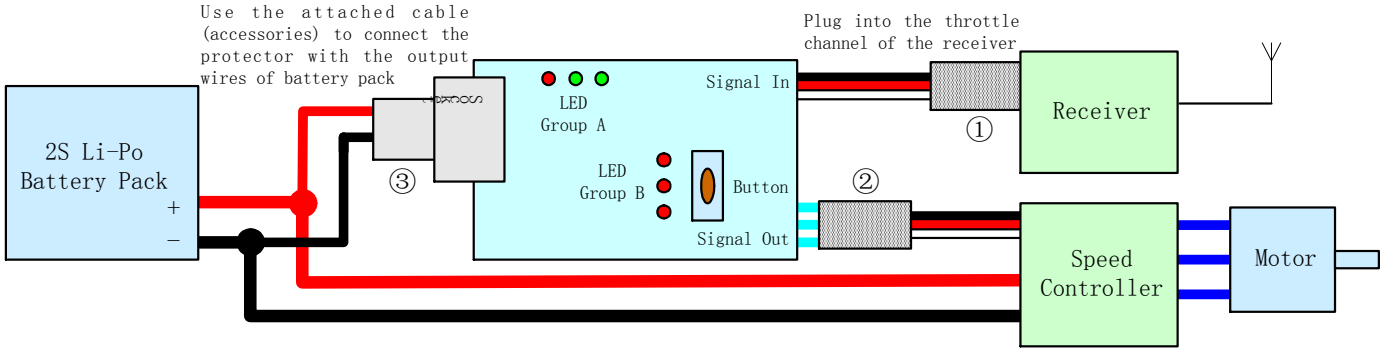
3. Wiring

3.1. Application #1 (For Li-Po battery pack WITH a balance discharge connector)

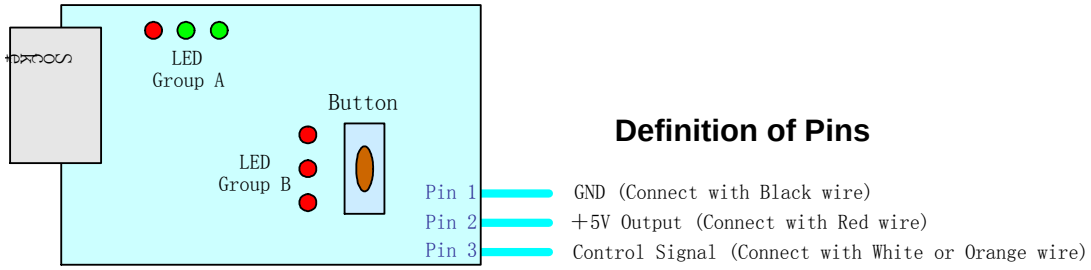


Wiring sequence is: ① - ② - ③ - ④

3.2. Application #2 (For Li-Po battery pack WITHOUT a balance discharge connector)



Wiring sequence is: ① - ② - ③



4. How to use the protector

4.1. Connect the protector with your receiver and speed controller

There are 2 ways to use the protector.

- **Application #1:** Monitor the voltage of each Li-Po cell. In such a case, you should plug the balance charge connector of the battery pack into the socket of the protector. Please make sure that you connect these equipments in the correct sequence: Before you plug the balance charge connector into the socket on the protector, you should firstly connect the main output wires of battery pack to your speed controller.
- **Application #2:** Monitor the total voltage of the Li-Po battery pack. In such a case, you should use the special cable to connect the battery pack with the protector in parallel. (The special cable is an accessory of the protector; you can find it in the packing plastic bag)

4.2. Set the threshold for deep discharge protection

The threshold is indicated by 3 LEDs in Group B. You can press the button beside the LEDs to change the threshold.

4.3. Set the “Protect Point” for abnormal throttle signal

The abnormal throttle signal is often caused by failure of your receiver, over-distance or strong electromagnetic interference, and etc. Usually this position (Protect Point) locates in the neutral range or brake range of throttle channel.

Turn on your transmitter, and move the throttle stick to the position where you expect the speed controller will get the control signal according to this position when the throttle signal from receiver is abnormal, and then plug the balance charge connector of battery pack into the socket of the protector, the protector will get the power supply and begin to work, the 3 LEDs will synchronously flash 2 times, that means the “Protect Point” setting is completed.

If there isn’t balance charge connector on your battery pack, please connect the special cable (you can find it in the packing plastic bag) with the battery pack in parallel, and then plug it into the socket of the protector, so the protector can get the power supply from this socket.